CAS No.	3159-62-4	1592-23-0	64755-01-7	557-04-0	Mixture[14]	4499-91-6	4485-12-5	53422-16-5	7620-77-1	68783-36-8	64754-95-6	38900-29-7	68603-11-2	Read Across Range to Untested Category Members
Name:	Octadecanoic acid, 12-hydroxy-, calcium salt (2:1)	Octadecanoic acid calcium salt	Fatty acids, tallow, calcium salts	Supporting Chemical: Octadecanoic acid magnesium salt	Supporting Chemical	Docosanoic acid, lithium salt	Octadecanoic acid, lithium salt	Octadecanoic acid, 12-hydroxy-, methyl ester, lithium salt	Octadecanoic acid, 12-hydroxy-, monolithium salt	Fatty acids, C_{16-22}, lithium salts	Castor oil, hydrogenated, lithium salt	Nonanedioic acid, dilithium salt	Hydrocarbon waxes, petroleum, oxidized, Me esters, calcium salts	
Synonym:	Calcium 12-hydroxystearate	Calcium stearate		Magnesium stearate	Generic calcium complex grease	Lithium docosanoate	Lithium stearate	Lithium 12-hydroxystearate (same as 7620-77-1)	Lithium 12-hydroxystearate (same as 53422-16-5)			Dilithium azelate		
Endpoint	**PHYSICAL-CHEMICAL PROPERTIES**													
Melting Point (°C)	320	179				271	249		264			186		179 to 320
Boiling Point (°C)	730	661				624	578		611			484		484 to 730
Vapor Pressure (hPa)	1 x 10E-21	6 X 10E-14				5 x 10E-14	1 x 10E-12		2 x 10E-16			2 x 10E-9		<1 x 10E-5
Partition Coefficient	11.7	14.3				6.1	4.1		2.6			-3.6		-3.6 to 14.3
Water Solubility[1] (mg/L)	9.7 x 10E-9 (6.4 x 10E-7)	40 at 15 C				0.04 (2.0 x 10E-5)	4.1 (0.002)	222 (0.1)				(877)		<0.001 to 877
	ENVIRONMENTAL FATE													
Photodegradation, OH⁻ reaction $T_{1/2}$ (d)	0.2	0.2				0.4	0.5		0.4			1.4		0.2 to 1.4
Stability in Water	stable	stable				stable	stable		stable			stable		stable
Environ. Distribution	<0.1% air <0.1% water 98% soil 2% sediment	<0.1% air <0.1% water 98% soil 2% sediment				<0.1% air <0.1% water 98% soil 2% sediment	<0.1% air 8% water 90% soil 2% sediment		<0.1% air 73% water 26% soil 0.6% sediment			<0.1% air >99% water <0.1% soil <0.1% sediment		air <0.1% soil <0.1% to 98% water <0.1% to 99% sediment <0.1% to 2%
Biodegradation classification	inherently	readily					readily							readily
	ENVIRONMENTAL EFFECTS													
Acute Fish, mg/L	LC50 >12,500	no toxicity at limits of solubility				no toxicity at limits of solubility		LC50 = 123	LC50 > 2000 mg/L			no toxicity at limits of solubility		LC50 >2000 mg/L [2]
Exposure type	whole grease	Ecosar Model thickener				Ecosar Model thickener		Ecosar Model thickener	thickener, OWD			Ecosar Model thickener		
Acute Invertebrate, mg/L	EL50 >1000	no toxicity at limits of solubility				no toxicity at limits of solubility						no toxicity at limits of solubility		EL50 >1000 mg/L [3]
Exposure type	WAF, whole grease	Ecosar Model thickener				Ecosar Model thickener						Ecosar Model thickener		
Algae, mg/L	>1000 EL,50 = >320 to	no toxicity at limits of solubility				no toxicity at limits of solubility						no toxicity at limits of solubility		EL_b50 = >100 to >1000 mg/L [3] EL,50 = >320 to >1000 mg/L
Exposure type	WAF, whole grease	Ecosar Model thickener				Ecosar Model thickener						Ecosar Model thickener		
	HEALTH EFFECTS													
Acute (mg/kg, oral)				LD50 >10,000				LD50 >5,000	LD50 >5,000			LD50 >5,000		LD50 >5,000
Acute (mg/kg, dermal)								LD50 >3,000 [6]	LD50 >3,000 [6]			LD50 >3,000 [6]		LD50 >2,000
Repeated-Dose (mg/kg/day, oral)				NOEL = 5% of diet (~2,500)				NOAEL = 1,000	NOAEL = 1,000			NOAEL = 1,000		NOAEL = 1,000
Repeated-Dose (mg/kg/day, dermal)					NOAEL = 2,000[14]			NOAEL = 2,100 NOEL = 2,100 NOEL = 2,000[1] NOAEL <500[12]	NOAEL = 2,100 NOEL = 2,100 NOEL = 2,000[1] NOAEL <500[12]	NOEL=2,000[1] NOAEL <500[12]		NOAEL = 2,100 NOEL = 2,100		NOAEL = 2,000
Genotoxicity, *in vitro*				negative										negative
Genotoxicity, *in vivo*														negative
Reproductive toxicity (dermal, mg/kg)														NOAEL = 2,000[13]
Developmental toxicity (dermal, mg/kg)								NOEL = 2,000[11]	NOEL = 2,000[11]	NOEL = 2,000[11]				NOAEL = 2,000
Carcinogenicity (dermal, mg, mouse skin painting)								negative (50 mg/dose)	negative (50 mg/dose)					negative

Blank cells indicate no data. Value from the read across range will be used for these cells.

Footnotes:

[1] EPI SuiteTM (US EPA, 2000) provides two estimates for water solubility values. The first value presents the estimate using the relationship with Kow (Meylan and Howard, 1994) while the value in parentheses was calculated by the fragment constant method (Meylan and Howard, 1995).

[2] Whole grease tested as an oil-water dispersion (OWD).

[3] Invertebrate and algae test ranges based on water accommodated fraction testing of a whole grease.

[5] NOAEL is for a grease that contained 13.1% CAS No. 7620-77-1 and 2.6% CAS No. 38900-29-7. Study was for 90 days in rats with sample R960002575.

NOAEL is for a grease that contained 8.8% CAS No. 7620-77-1 and 1.8% CAS No. 38900-29-7. Study was for 4 weeks in rats with sample R960002575.

NOAEL is for a grease that contained 8.8% CAS No. 7620-77-1 and 1.8% CAS No. 38900-29-7. Study was for 13 weeks in rats with sample R960002575.

Test was with PARL-3093-GR-81, a grease containing 7.5% lithium 12-hydroxystearate.

[1] NOEL is for a grease that contained 5.6% CAS No. 7620-77-1 and 0.7% CAS No. 68783-36-8. Study was for 13 weeks in rats with Mobilux EP-2.

[11] NOEL is for a grease that contained 8.1% CAS No. 7620-77-1 and 0.9% CAS No. 68783-36-8. Study was in female rats with "Generic Lithium Grease".

[12] Lowest dose tested was with a grease that contained 7.9% CAS No. 7620-77-1 and 0.9% CAS No. 68783-36-8. Study was in male F344 rats with "Borated-Lithium 12-Hydroxy Complex Generic Grease". Grease contained ~20% performance additives, over twice the amount typically used in greases.

CAS No.	3159-62-4	1592-23-0	64755-01-7	557-04-0	Mixture[14]	4499-91-6	4485-12-5	53422-16-5	7620-77-1	68783-36-8	64754-95-6	38900-29-7	68603-11-2	
Name:	Octadecanoic acid, 12-hydroxy-, calcium salt (2:1)	Octadecanoic acid calcium salt	Fatty acids, tallow, calcium salts	Supporting Chemical: Octadecanoic acid magnesium salt	Supporting Chemical	Docosanoic acid, lithium salt	Octadecanoic acid, lithium salt	Octadecanoic acid, 12-hydroxy-, methyl ester, lithium salt	Octadecanoic acid, 12-hydroxy-, monolithium salt	Fatty acids, C_{16-22}, lithium salts	Castor oil, hydrogenated, lithium salt	Nonanedioic acid, dilithium salt	Hydrocarbon waxes, petroleum, oxidized, Me esters, calcium salts	**Read Across Range to Untested Category Members**
Synonym:	Calcium 12-hydroxystearate	Calcium stearate		Magnesium stearate	Generic calcium complex grease	Lithium docosanoate	Lithium stearate	Lithium 12-hydroxystearate (same as 7620-77-1)	Lithium 12-hydroxystearate (same as 53422-16-5)			Dilithium azelate		

[13] Results from repeat dose studies and developmental studies with lithium complex greases with typical additive concentrations can be used to read across to all members of category.

[14] A 13-weeks dermal toxicity study was performed on a "generic calcium complex grease" that contained 3.5% CAS No. 62-54-4 (acetic acid, calcium salt), 3.5% CAS No. 64754-97-8 (fatty acids, coco, calcium salts), 1.4% CAS No. 69012-90-4 (fatty acids, C6-12, calcium salts), and 1.2% CAS No. 66071-81-6 (fatty acids, tallow, hydrogenated, calcium salts). The structures of the thickeners in this grease were judged to be similar enough to those in the Lubricating Grease Thickeners category that the data from this study can be applied by read-across.